



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,080	07/16/2001	Yatin Acharya	95-508	5978
20736	7590	02/04/2005	EXAMINER	
MANELLI DENISON & SELTER 2000 M STREET NW SUITE 700 WASHINGTON, DC 20036-3307				NGUYEN, THU HA T
		ART UNIT		PAPER NUMBER
				2155

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/905,080	ACHARYA, YATIN	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 July 2001.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-12 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/24/01.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

DETAILED ACTION

1. Claims 1-12 are presented for examination.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 2 and 12 are objected to because of the following informalities: As per claim 2 and 12 recited the limitation "the depletion of flow control credits". There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. As per claim, the presence of the trademark or trade name "InfiniBand™" is not proper under 35 U.S.C. 112, second paragraph (see 37 CFR 2173.05 (u)).

If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982). The scope of claim is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C.

§ 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-12 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Pekkala et al.** (hereinafter Pekkala) U.S. Pub. No. **2002/0085493**.

9. As to claim 1, **Pekkala** teaches the invention substantially as claimed, including a method in a network node, the method comprising:

detecting by a network interface (port 208, figure 2) a depletion of flow control resources representing a depletion of network bandwidth for a prescribed data stream (paragraphs 0049-0051, 0074-0077, 0092, 0106-0107);

outputting by the network interface a data flow interruption request based on the detected depletion of flow control resources (paragraphs 0084, 0092-0094, 0112); and

reducing, by a processor and based on the data flow interruption request, the prescribed data stream by reducing execution of a prescribed application resource configured for generating the prescribed data stream (paragraphs 0076, 0084-0085, 0094, 0113-0114).

10. As to claim 2, **Pekkala** teaches the invention substantially as claimed, wherein the network interface is configured for outputting the prescribed data stream according to infiniBand protocol, the detecting step including detecting the depletion of flow control credits, as the flow control resources, for a prescribed virtual lane (abstract, paragraphs 0056, 0077).

11. As to claim 3, **Pekkala** teaches the invention substantially as claimed, wherein the outputting step includes outputting the data flow interruption request to a memory controller configured for controlling access to system memory resources, the memory controller rendering unavailable the system memory resources for the prescribed application resource in response to reception of the data flow interruption request (paragraphs 0085, 0094).

12. As to claim 4, **Pekkala** teaches the invention substantially as claimed, wherein the reducing step includes halting execution of the prescribed application resource, based on a determined unavailability of the system memory resources (paragraphs 0076, 0084-0085, 0094, 0113-0114).

13. As to claim 5, **Pekkala** teaches the invention substantially as claimed, further comprising outputting by the network interface a resume data flow request based

on a detected replenishment of the flow control resources for the prescribed data stream (paragraphs 0114, 0117-0118).

14. As to claim 6, **Pekkala** teaches the invention substantially as claimed, further comprising resuming execution of the prescribed application resource based on the resume data flow request (paragraphs 0114-0116).

15. As to claim 7, **Pekkala** teaches the invention substantially as claimed, including a network node comprising:

a network interface configured for detecting a depletion of flow control resources representing a depletion of network bandwidth for a prescribed data stream, the network interface configured for outputting a data flow interruption request based on the detected depletion of flow control resources (paragraphs 0049-0051, 0074-0077, 0084, 0092-0094, 0106-0107, 0112); and

a processor configured for executing a prescribed application resource for generation of the prescribed data stream, the processor configured for reducing the prescribed data stream by reducing execution of the prescribed application resource, based on the data flow interruption request (paragraphs 0076, 0084-0085, 0094, 0113-0114).

16. As to claim 8, **Pekkala** teaches the invention substantially as claimed, further comprising a memory controller configured for controlling access to system

memory resources, the memory controller configured for rendering unavailable the system memory resources for the prescribed application resource in response to reception of the data flow interruption request (paragraphs 0085, 0094).

17. As to claim 9, **Pekkala** teaches the invention substantially as claimed, wherein the processor is configured for reducing the execution of the prescribed application resource based on detecting the unavailability of the system memory resources (paragraphs 0076, 0084-0085, 0094, 0113-0114).

18. As to claim 10, **Pekkala** teaches the invention substantially as claimed, wherein the network interface is configured for outputting a resume data flow request based on a detected replenishment of the flow control resources for the prescribed data stream (paragraphs 0114, 0117-0118).

19. As to claim 11, **Pekkala** teaches the invention substantially as claimed, wherein the processor is configured for resuming execution of the prescribed application resource based on the resume data flow request (paragraphs 0114-0116).

20. As to claim 12, **Pekkala** teaches the invention substantially as claimed, wherein the network interface is configured for outputting the prescribed data stream according to infiniband protocol, the network interface configured for detecting the

depletion of flow control credits, as the flow control resources, for a prescribed virtual lane (abstract, paragraphs 0056, 0077).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a) Susnow et al. (US. Pub. No. 2002/0159385) discloses a flow control system including transmit and receive buffer capable of sending and receiving data packet and prevent loss of data due to receive buffer overflow.
- b) Kagan et al. (US. Pat. No. 6,243,787) discloses a method for controlling information to a management processor of a communications switch for synchronizing of interrupts with data packets.
- c) Biran et al. (US. Pub. No. 2004,0081394) discloses a system and method for controlling information to a management processor of a communication switch.
- d) Gil (US. Pub. No. 2004/0064664) discloses a system and method for dynamically allocating and deallocating memory for variable length packets in an Infiniband subnetwork.
- e) Bauman (US. Pat. No. 6,046,979) discloses a system and method for controlling the flow of variable length packets to a multiport switch.
- f) Bloch et al. (US. Pub. No. 2001/0043564) discloses a method for packet communication buffering with dynamic flow control.
- g) Colloer et al. (US. Pub. No. 2002/0150049) discloses a method for triggering flow control packets.

h) Ma et al. (US. Pat. No. 6,192,406) discloses a rated-base flow and congestion control mechanism for achieving low loss of data packet while adjusting source rates.

i) Graham (US. Pat. No. 6,816,889) discloses an assignment of dual port memory banks for a CPU and a HCA in an InfiniBand computing node.

j) Oomuro et al. (US. Pat. No. 5,258,979) discloses an ATM communication system with optimal traffic control by changing the allocated bandwidth.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam, can be reached at (571) 272-3978.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

January 31, 2005



HOSAIN ALAM

PRIMARY PATENT EXAMINER